2 SEMI-ANNUAL MONITORING REPORT

In accordance with the KCRDF Title V Permit Standard Condition 1.F; Condition 1437, Part 16; BAAQMD Regulation 8-34-411 and 40 CFR §60.757(f), this report is a Combined Semi-Annual Title V Report and Partial 8-34 Annual Report that is required to be submitted by the KCRDF. The report contains monitoring data for the operation of the landfill gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe included in this report is July 1, 2017 through December 31, 2017. The following table lists the rules and regulations that are required to be included in this Combined Report.

Table 2-1 Semi-Annual Report Requirements

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.1 §60.757(f)(4)	All collection system downtime, including individual well shutdown times and the reason for the shutdown.	Section 2.1, Appendices B & C
8-34-501.2 §60.757(f)(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2, Appendix B
8-34-501.3, 8-34-507, §60.757(f)(1)	Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507.	Section 2.3, Appendix D
8-34-501.4, 8-34-510	Testing performed to satisfy any of the requirements of this Rule.	Sections 2.4 & 2.10, Appendix E
8-34-501.5, 8-34-505	Monthly landfill gas (LFG) flow rates and well concentration readings for facilities subject to 8-34-404.	Sections 2.5, 2.10 & 2.11, Appendices I & L
8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5)	For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppmv), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppmv.	Section 2.6 & 2.7, Appendices F & G
8-34-501.7	Annual waste acceptance rate and current amount of waste in place.	Section 2.8
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the Collection and Control Design Plan.	Section 2.9
8-34-501.9, 8-34-505, §60.757(f)(1)	For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair.	Section 2.10, Appendices I & K
8-34-501.10, 8-34-508, §60.757(f)(1)	Continuous gas flow rate records for any site subject to Section 8-34-508.	Section 2.11, Appendix L
8-34-501.11, 8-34-509	For operations subject to Section 8-34-509, records or key emission control system operating parameters.	Section 2.2.2

Table 2-1 (Continued)

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.12	The records required above shall be made available and retained for a period of five years.	Section 1.2
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.13
§60.10 (d)(5)(i)	Start-up, Shutdown, and Malfunction Events	Section 4, Appendices B & C

2.1 Collection System operation (BAAQMD 8-34-501.1 & §60.757(f)(4))

Appendix A contains a map of the KCRDF's existing landfill GCCS. Section 2.1.1 summarizes the collection system downtime. Section 2.1.2 includes the individual well shutdown times and the reason for each shutdown.

2.1.1 Collection System Downtime

During the period covered in this report, the landfill GCCS was not shutdown for more than five days on any one occasion. The downtime for the 2017 partial calendar year (July 1, 2017 through December 31, 2017) is 120.9 hours out of an allowable 240 hours per year pursuant to BAAQMD Regulation 8-34-113.2 (Limited Exemption, Inspection and Maintenance). The downtime for the 2017 calendar year (January 1, 2017 through December 31, 2017) is 136.9 hours out of an allowable 240 hours per year pursuant to BAAQMD Regulation 8-34-113.2 (Limited Exemption, Inspection and Maintenance).The Flare SSM Log that list dates, times, and lengths of shutdowns for the reporting period is included in Appendix B.

2.1.2 Well Start-Up and Disconnection Log

There were twenty-two (22) Well SSM events during the reporting period. Five vertical wells were decommissioned and thirteen new wells were started during the reporting period. Wellfield construction activity is discussed in Section 2.13.

The Wellfield SSM Log that list dates, times, and lengths of shutdowns for the reporting period is included in Appendix C.

2.2 Emission Control Device Downtime (BAAQMD 8-34-501.2 & §60.757(f) (3))

No bypassing of the control system or other emissions of raw LFG occurred during the reporting period. The SSM Log that includes all downtimes and reasons for each shutdown for the A-12 Flare is presented in Appendix B. As indicated in Section 2.1.1, the collection system downtime for the 2017 partial calendar year (July 1, 2017 through

December 31, 2017) is 120.9 hours. The downtime for the 2017 calendar year (January 1, 2017 through December 31, 2017) is 136.9 hours out of an allowable 240 hours per year pursuant to BAAQMD Regulation 8-34-113.2 (Limited Exemption, Inspection and Maintenance).

2.2.1 LFG Bypass Operations (§60.757(f)(2))

Title 40 CFR §60.757(f)(2) is not applicable at the KCRDF because a bypass line has not been installed. LFG cannot be diverted from the control equipment.

2.2.2 Key Emission Control Operating Parameters (BAAQMD 8-34-501.11 & 8-34-509)

The A-12 Flare is subject to continuous temperature monitoring as required in BAAQMD Regulation 8-34-507 and §60.757(f)(1). See Section 2.3 for flare temperature monitoring results.

2.3 Temperature Monitoring Results (BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1))

The combustion zone temperature of the A-12 Flare is monitored with Type K Thermocouples. The temperature is displayed and digitally recorded with a General Electric (GE) data panel and Yokogawa FX112 continuous digital recorder. The temperature readings are downloaded and archived each working day.

Flare operating records indicate that the A-12 Flare three-hour average combustion zone temperature did not drop below the 1,400 degrees Fahrenheit (°F) limit, as required by Title V Permit A1812 Condition 1437 Part 10, during the reporting period when the A-12 Flare was in operation.

The flare operating records also indicate that the A-12 Flare combustion zone temperature did not drop below 1,535°F on a three-hour average basis, while in operation during the reporting period (July 1, 2017 through December 31, 2017), pursuant to the limits established during the March 29, 2017 Performance Test.

Appendix D contains flare temperature deviation/ inoperative monitor reports for the reporting period while the A-12 Flare was in operation.

2.4 Monthly Cover Integrity Monitoring (BAAQMD 8-34-510)

The Monthly Cover Integrity Monitoring Reports are included in Appendix E. The cover integrity monitoring was performed on the following dates:

- July 5, 2017
- August 1, 3, 14, and 15, 2017
- September 25, 26, and 29, 2017
- October 3, 16, 20, and 30, 2017
- November 8, 10, and 29, 2017

- December 13, 2017

During the December monthly monitoring event, KCRDF's consultant technician noted ponding. Corrective actions were initiated and completed on December 27, 2017. See Appendix E, Cover Integrity Monitoring Reports, for more detail.

2.5 Less than Continuous Operation (BAAQMD 8-34-501.5)

The KCRDF does not operate under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) and therefore is not required to submit monthly LFG flow rates.

2.6 Surface Emissions Monitoring (BAAQMD 8-34-501.6, 8-34-506, & §60.757(f)(5))

Quarterly Surface Emissions Monitoring (SEM), pursuant to BAAQMD Regulation 8-34-506, occurred during the reporting period on the following dates:

- Third Quarter 2017 – August 14, 16, 17 and 21, 2017
- Fourth Quarter 2017- October 25, 2017

A Thermo Scientific Toxic Vapor Analyzer 1000 (TVA1000) flame ionization detector (FID) was used to perform the SEM during the Third and Fourth Quarter 2017 events. The landfill surface was monitored along the path delineated on the SEM walking path map. Any areas suspected of having emission problems by visible observations were also monitored. Immediately prior to the Third and Fourth Quarter 2017 monitoring events, the monitoring equipment was calibrated using zero air and a 500 parts per million by volume (ppmv) methane (CH_4) calibration gas.

The Third Quarter 2017 SEM was performed on August 14, 16, 17 and 21, 2017 and twenty-three (23) exceedances (FID readings greater than 500 ppm CH_4 above background measurements) were detected. Corrective actions were completed. The ten-day re-monitoring event was conducted on August 16, 17, 18 and 22, 2017, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on September 12, 2017 and no exceedances were detected.

The Fourth Quarter 2017 SEM was performed on October 25, 2017 and four (4) exceedances (FID readings greater than 500 ppm CH_4 above background measurements) were detected. Corrective actions were completed. The ten-day re-monitoring event was conducted on October 31 and November 1, 2017, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on November 15, 2017 and no exceedances were detected.

The Third and Fourth Quarter 2017 SEM Report is included in Appendix F.

2.7 Component Leak Testing (BAAQMD 8-34-501.6 & 8-34-503)

Quarterly component leak testing, pursuant to BAAQMD Regulation 8-34-503, occurred during the reporting period on the following dates:

- Third Quarter 2017 – August 14, 2017
- Fourth Quarter 2017- October 25, 2017

A Thermo Scientific TVA1000 FID was used to perform both the Third and Fourth Quarter 2017 leak testing events. No exceedances of 1,000 ppm were identified during the Third and Fourth Quarter 2017 monitoring events.

Appendix G contains the Quarterly Component Leak Check Monitoring Reports.

2.8 Solid Waste Placement Records (BAAQMD 8-34-501.7)

The solid waste placement records were reviewed for the timeframe of July 1, 2017 through December 31, 2017. In addition, the solid waste placement records were reviewed and revised as necessary for the previous timeframe of January 1, 2017 through June 30, 2017. The current waste-in-place figure includes solid waste placed in the landfill through December 31, 2017. A table of monthly totals for the reporting period is provided in Appendix H. The total waste accepted and placed at the KCRDF landfill did not exceed the 2,600 ton-per-day limit during the reporting period, pursuant to Title V Permit Condition Number 1437, Part 1a. The current waste-in-place tonnage listed below did not exceed the 19.84 million tons limit as required in the Title V Permit Condition Number 1437, Part 1b. Table 2-2 summarizes the solid waste placement records for the reporting period.

Table 2-2 Solid Waste Placement

Waste Placement	Total Waste Landfilled Excluding Cover
January 1, 2017 through June 30, 2017, Waste Placement (Revised)	88,311.0 tons
July 1, 2017 through December 31, 2017, Waste Placement	92,377.0 tons
Current Waste-In-Place as of December 31, 2017	Approximately 7.142 Million tons

2.9 Non-degradable Waste Acceptance Records (BAAQMD 8-34-501.8)

The GCCS Design Plan for the KCRDF does not include non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

2.10 Wellhead Monitoring Data (BAAQMD 8-34-501.4 & 8-34-505)

Wellhead monitoring was performed on a monthly basis pursuant to BAAQMD Regulation 8-34-505. The well readings for July 1, 2017 through December 31, 2017 are included in Appendix I. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 – Each wellhead shall operate under a vacuum.
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (131°F).
- 8-34-305.4 – The oxygen (O_2) concentration in each wellhead shall be less than 5 percent (%) by volume.

The wellhead monitoring was performed on the following dates:

- July 5 and 20, 2017
- August 1, 3, 14, and 15, 2017
- September 13, 22, 23, 25, 26, and 27, 2017
- October 3, 10, 16, 17, 20, 24, 25, 26 and 30, 2017
- November 3, 8, 10, 14, 16, 17 ,22 and 27, 2017
- December 4, 5, 6, 8, 11, 12, and 13, 2017

2.10.1 Wellhead Deviations (BAAQMD 8-34-501.9 & §60.757(f)(1))

There were thirty-four (34) wellfield exceedances during this reporting period. Corrective actions were initiated within the required period and no further exceedances were detected. During this reporting period, KCRDF submitted Title V Section I.F, 10 and 30-day letter on August 31, 2017, to report the delay in implementing well expansion on Well 73. Copy of the submittal is included in Appendix J. Please refer to the Wellfield Deviation Log, included in Appendix K, for exceedance records for the reporting period of July 1, 2017 through December 31, 2017.

2.10.2 Higher Operating Value (HOV) Wells

During the reporting period, the following wells were approved to operate at a temperature higher operating value (HOV) of 145°F: 37, 45, 51, 57, 58, 65, 66, 71, 74, 76, 78, 86, 87, 89, 91, 98, 120, 128, and 135. Wells 56, and 75 are approved to operate at a temperature HOV of 156°F.

Copies of all BAAQMD correspondence are located in Appendix J.

2.11 Gas Flow Monitoring Results (BAAQMD 8-34-501.10, 8-34-508, & §60.757(f)(1)

The A-12 Flare LFG flow rate is measured continuously with a Kurz flowmeter. The LFG flow is displayed and digitally recorded with a General Electric data panel and Yokogawa FX112 continuous digital recorder. The flow meter is maintained and

calibrated pursuant to the manufacturer's recommendations. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording fuel flow at least every fifteen (15) minutes. Appendix D contains the specific details. The flow data for the flare are available for review at the KCRDF. Appendix L contains a summary of the monthly LFG flow rates and heat input for the flare.

Table 2-3 below is a summary of the LFG flow from July 1, 2017 through December 31, 2017, for the A-12 Flare. The A-12 Flare did not exceed the annual heat input rate of 1,087,700 million British Thermal Units (MMBTU), pursuant to Title V Permit A1812 Condition Number 1437, Part 8. The A-12 Flare did not exceed the permitted daily limit of 2,980 million British Thermal Units (BTU) for the duration of this event.

Table 2-3 Total LFG Flow A-12 Flare – July 1, 2017 through December 31, 2017

Emission Control Device	Average Flow (scfm)	Methane (%)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heat Input (MMBTU)
A-12 Flare	2,600	48.3	670,698,740	323,947,491	328,159

scfm = standard cubic feet per minute CH_4 = methane % = percent scf = standard cubic feet
*Methane concentration from March 29, 2017 Source Tests for the A-12 Flare.

2.12 Compliance with Title V Permit Cond. No. 1437, Part 14

The condensate injection rate did not exceed five (5) gallons per minute (gpm) during injection events (excluding startup times).

Table 2-4 summarizes the condensate injection rate and 12-month (consecutive) throughput in gallons for July 1, 2017 through December 31, 2017. Per Title V Permit A1812 Condition Number 1437 Part 14, the 12-month rolling average is below the permitted condensate injection limit of 2.0 million gallons per year. The monthly condensate injection logs are included in Appendix M.

Table 2-4 Condensate Injection Rates

Month	Average Condensate Injection Rate (gpm)	Condensate Injection Throughput (gallons)	Condensate Injection Throughput 12-Month Total (gallons)
July-17	2.6	76,254	1,097,616
August-17	3.3	80,470	1,099,971
September-17	3.5	83,281	1,111,751
October-17	2.1	67,300	1,094,511
November-17	3.3	107,739	1,112,895
December-17	3.6	126,137	1,136,027

gpm= gallons per minute

2.13 Compliance with §60.757(f)(6)

"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."

The GCCS was modified pursuant to Title V Permit Number A1812 during the reporting period. During the reporting period, five vertical wells were decommissioned and thirteen new vertical wells were started pursuant to Title V Permit Condition 1437 Part 6.

As of December 31, 2017, the GCCS system consists of 70 vertical wells, 0 horizontal collectors, and 3 leachate collection risers (LCRS).

2.14 Compliance with Title V Permit Cond. No. 1437, Parts 2 and 3

A total of 340.2 tons of contaminated soil containing volatile organic compounds (VOCs) greater than 50 parts per million (ppm) was received during the reporting period. Low-VOC soil (containing less than 50 ppm of VOCs) was received during the reporting period. Required records of soil acceptance are available for review at the KCRDF.

2.15 Compliance with Title V Permit Cond. No. 23022, Part 2

Diesel Engine S-8 (the diesel engine for the portable compressor) is required to be operated less than 1,290 hours during any consecutive 12-month period. S-8 operated a total of 126 hours during the 12-month reporting period, January 1, 2017 through December 31, 2017. S-8 operated a total of 60 hours during the 6-month reporting period, July 1, 2017 through December 31, 2017 period. S-8 used a total of approximately 209 gallons of diesel fuel during the 6-month reporting period.

2.16 Compliance with Title V Permit Cond. No. 1437, Part 20

Effective July 2012, the A-12 Flare Sulfur dioxide emissions shall not exceed 300 ppmv and SO_2 (dry) emissions shall not exceed 94.9 tons per year. The total reduced sulfur (TRS) shall not exceed 860 ppmv (dry) expressed as hydrogen sulfide.

To demonstrate compliance with above limits, the site will conduct annual testing of total TRS at the landfill gas main header. The source test data for (source test conducted on conducted March 29, 2017) TRS value was used to calculate the monthly SO_2 emissions in tons. The SO_2 emission did not exceed limit during the reporting period. The SO_2 tons 12-month rolling logs are included in Appendix P.

2.17 Compliance with Title V Permit Cond. No. 25872

To demonstrate compliance with permit limits for Source S-24, Construction & Demolition Debris Stockpile, the total construction and demolition debris accepted at S-

24 in any consecutive 12-month period is limited to 104,000 tons and 500 tons for each day. To demonstrate compliance with Source S-25 Green and Wood Waste Stockpile the total combined green waste and wood waste debris accepted at S-25 in any consecutive 12-month period is limited to 250,000 and 4,500 tons each day. Records are available for review at the KCRDF. During the reporting period, the site did not exceed the permitted annual and daily limits.

4 START-UP, SHUTDOWN, MALFUNCTION REPORT

4.1 SSM Report for the Collection and Control Systems at the KCRDF

The NESHAPS contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a Semi-Annual Report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by §63.1980(a) of the NESHAP and §60.757(f) of the NSPS summarize the GCCS exceedances. These two Semi-Annual Reports contain similar information and have been combined as allowed by §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR Part 63, AAAA became effective on January 16, 2004. Those SSM events that occurred during the semi-annual reporting period are reported in this section (July 1, 2017 and December 31, 2017). The following information is included as required:

- During the reporting period, twenty-eight (28) A-12 Flare SSM events occurred. The A-12 Flare shut down and restarted during the reporting period due to the reasons noted in the Flare SSM Log, located in Appendix B.
- During the reporting period, twenty-two (22) wellfield SSM events occurred. Details are included in the Wellfield SSM Log, located in Appendix C.
- During the reporting period, two (2) monitoring/recorder equipment SSM events occurred.
- In all Fifty-two (52) events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan.
- No exceedances of any applicable emission limitation in the landfills NESHAP (63.10(d)(5)(i)) occurred.
- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required, nor prepared (§63.6(e)(3)(viii)).

I certify the following:

Based on information and belief formed after reasonable inquiry, information on the startup, shutdown, malfunction forms, all accompanying reports, and other required certifications are true, accurate, and complete.

Signature of Responsible Official **Date** 1/25/18

Daniel North
Name of Responsible Official